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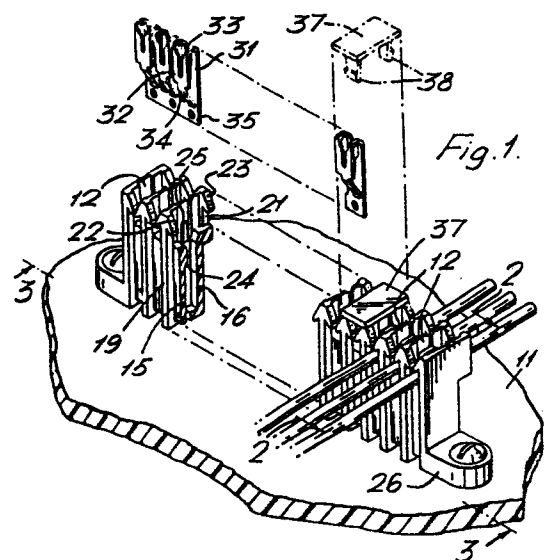
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64 **Commoning connector.**

67 A connector comprises a series of slotted terminals (31) integrally joined to a carrier strip (35) mounted in an insulating housing (11) with the carrier strip (35) extending through slots (14) formed in barrier walls (13) separating adjacent terminal-receiving cavities (12) so that insulated wires can be inserted simultaneously through a wire-receiving face of the housing (11) into the slotted terminals (31) and thereby connected together.



The invention relates to an electrical connector.

A known connector comprises a housing moulded in one piece from insulating plastics material with
5 a row of terminal-receiving cavities opening to a wire-receiving face of the housing and separated from each other by insulating barrier walls, a series of wire-receiving terminal portions formed with respective wire-receiving slots received in respective
10 cavities with the slots extending away from the wire-receiving face so that respective wires can be forced, simultaneously, laterally of their axes through the wire-receiving face into respective slots to establish connection with the wires.

15 However, it is often required to common all the wires within the connector.

According to the invention, the wire-receiving terminal portions extend in the same direction away from a flexible carrier strip to which they are
20 integrally joined, each barrier wall being formed with a slot extending away from the wire-receiving face through which slots the carrier strip extends.

Thus, the wires can be simultaneously connected together in the connector of the invention.

25 A specific example of the invention will now be described with reference to the accompanying drawings, in which:-

Figure 1 is a partly exploded perspective view of a connector according to the invention with a
30 terminal strip reversed for clarity;

Figure 2 is a cross-sectional view taken along line 2 - 2 of Figure 1;

Figure 3 is a side view of the connector in the direction 3 - 3 of Figure 1; and,

5 Figure 4 is a schematic perspective view of a harness board illustrating the manufacture of an electrical harness incorporating the invention.

10 The connector includes a housing 11 moulded in one piece from insulating plastics material with a row of terminal-receiving cavities 12 opening to a wire-receiving face of the housing. Adjacent cavities are separated from each other by insulating barrier walls 13, each barrier wall being formed with a slot 14 extending away from the wire-receiving face for the entire length of the cavity. The cavities have respective pairs of opposed side walls 15 and 16, formed with wire-receiving slots 17 and 18, respectively, which extend away from the mating face for a short distance into the side walls. Strengthening ribs 19 extend along side walls 15 away from the wire-receiving face in parallel relation and under a base wall of the cavities. Wire-trapping detents 22 are provided on the ends of the ribs 19 adjacent the wire-receiving face. Parallel ribs 21 extend for a short distance along a lateral extension of the side wall 16 and are provided with similar wire-trapping detents 23 at ends adjacent the wire-receiving face. A locking shoulder 24 is formed in each side wall 15 by a mould core pin and oppositely facing terminal supporting shoulders 25 are provided in each barrier wall. Mounting feet 25 are provided at opposite ends of the housing.

35 The terminal strip is stamped and formed from sheet metal and comprises a row of wire-connecting portions extending in the same direction from a

flexible carrier strip 35 to which they are integrally joined. Each wire-connecting portion comprises a metal strip reversely bent to provide parallel metal plates 31 and 32 connected by a bight, a wire-receiving slot 33 extending through the bight into each plate. The plate 32 is provided at a free end with a stabilising foot 34 of reduced width which extends towards the plate 31. A locking tongue 36 is struck from each of the plates 31.

A predetermined length of terminal strip is severed from a reeled supply and inserted into the housing through the wire-receiving face until each locking tongue 36 springs behind a respective shoulder 24 and the free ends of side walls 35 abut the bases of the cavities. The carrier strip 35 extends through the slots 14. When fully inserted into the housing, the terminal strip is substantially completely enclosed and the terminal slots are aligned with the wire-receiving slots 17 and 18. A cover 37 having locking legs 38 engaging detents 22, 23 may be used to cover a vacant cavity indicating the longitudinal extent of the terminal strip. Insulated wires may simultaneously be inserted into the terminals through the wire-receiving face so that the walls of the terminal slots penetrate the insulation to establish connection with the wire cores, commoning the wires. During wire insertion, the bight of the wire-connecting portions are supported by the shoulders 25 as described in U.S. Patent Application No. 859,067 (9072).

A suitable harness manufacturing method is described in U.S. Patent No. 3,859,724 and illustrated schematically in Figure 4. Jigs 41, similar to those described in U.S. Patent Application No. 883,559 (9091), are mounted at predetermined locations on a board 42. Each jig includes an inverted channel-section

base 43 from opposite sides of which upstand wire-
locating combs 44, 45 defining between them a connector
receiving recess. Wires are laced into the combs in
which the connectors (not shown) are mounted and
5 inserted into the connectors by a pneumatically
powered tool 46. The tool has a head 47 housing an
insertion ram (not shown) which head can be releasably
attached to the jig by pivotal hooks 48 which engage
in the opposite ends of the channel 43. Insertion
10 forces are carried by the reinforcing ribs 19.

An advantage of the connector is that it
enables harness wires to be commoned simultaneously
without previously stripping the insulation from
the wires. The connector may be mounted on a chassis
15 by feet 26 to common wires terminated in connectors
of the kind described in U.S. Patent Application No.
859,067. Wires can be terminated at their ends
or at an intermediate location. The connector is
a simple two part construction.

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Claims:

1. An electrical connector for commoning electrical conductors comprising a housing moulded in one piece from insulating plastics material with a row of terminal-receiving cavities opening to a wire-receiving face of the housing and separated from each other by insulating barrier walls, a series of wire-receiving terminal portions formed with respective wire-receiving slots received in respective cavities with the slots extending away from the wire-receiving face so that respective wires can be forced, simultaneously, laterally of their axes through the wire-receiving face into respective slots to establish connection with the wires, characterised in that, the wire-receiving terminal portions (31, 32) extend in the same direction away from a flexible carrier strip (35) to which they are integrally joined, each barrier wall (13) being formed with a slot (14) extending away from the wire-receiving face through which slots (14) the carrier strip (35) extends.

2. An electrical connector according to Claim 1, characterised in that the terminal strip is substantially completely enclosed within the cavity (12) and wire-receiving slots (17, 18) are formed in respective pairs of opposed cavity walls (15, 16) to extend away from the wire-receiving face in alignment with respective wire-receiving terminal slots (33).

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